



Recommendations for the Use of Antiretroviral Drugs in Pregnant Women with HIV Infection and Interventions to Reduce Perinatal HIV Transmission in the United States

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Postpartum Follow-Up of Women Living with HIV (Last updated December 24, 2019; last reviewed December 24, 2019)

Panel's Recommendations

- Antiretroviral therapy (ART) is currently recommended for all individuals living with HIV to reduce the risk of disease progression and to prevent the sexual transmission of HIV (AI).
- ART should be continued after delivery (AI). Any plans for modifying ART after delivery should be made in consultation with the woman and her HIV care provider, ideally before delivery, taking into consideration the recommended regimens for nonpregnant adults (AIII) and plans for future pregnancies.
- Clinicians should discuss future reproductive plans and timing, as well as the risks and benefits of conceiving on specific antiretroviral (ARV) medications, and the use of appropriate contraceptive options to prevent unintended pregnancy (AIII).
- Because the immediate postpartum period poses unique challenges to ARV adherence, arrangements for new or continued supportive services should be made before hospital discharge (AII).
- Contraceptive counseling should start during the prenatal period; a contraceptive plan should be developed prior to hospital discharge (AIII).
- Women with a positive rapid HIV antibody test during labor require immediate linkage to HIV care and comprehensive follow-up, including for confirmation of HIV infection (AII).
- Prior to hospital discharge, the woman should be given ARV medications for herself and her newborn to take at home (AIII).
- Breastfeeding **is not recommended** for women in the United States who have confirmed HIV or are presumed to be living with HIV because safer infant feeding alternatives are available (AI).
- Infant feeding counseling, including a discussion of potential barriers to formula feeding, should begin during the prenatal period, and this information should be reviewed after delivery (AIII).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

The postpartum period provides an opportunity to review and optimize women's health care. Comprehensive medical care and supportive services are particularly important for women living with HIV and their families, who often face multiple medical and social challenges. Components of comprehensive care include the following services as needed:

- Primary care, gynecologic/obstetric care, and HIV specialty care for the woman with HIV;
- Pediatric care for her infant;
- Family planning services;
- Mental health services;
- Substance abuse treatment;
- Supportive services;
- Coordination of care through case management for a woman, her child (or children), and other family members; *and*
- Prevention of secondary transmission for serodiscordant partners, including counseling on the use of condoms, antiretroviral therapy (ART) to maintain virologic suppression in the partner with HIV (i.e., treatment as prevention), and the potential use of pre-exposure prophylaxis (PrEP) by the partner without HIV.

Supportive services should be tailored to the individual woman's needs and can include case management; child care; respite care; assistance with basic needs, such as housing, food, and transportation; peer

counseling; and legal and advocacy services. Ideally, these services should begin before pregnancy and continue throughout pregnancy and the postpartum period.

Immediate linkage to care, comprehensive medical assessment, counseling, and follow-up are required for all women with HIV and particularly for women who have a positive HIV test during labor or at delivery. The American College of Obstetricians and Gynecologists recommends that all women have contact with their obstetrician-gynecologists within 3 weeks postpartum **and that postpartum care be provided as an on-going process based on a woman's individual needs rather than as a single postpartum visit.**¹ Women with HIV should have a follow-up appointment with the health care provider who manages their HIV care, whether that is an obstetrician or an HIV health care provider, within 2 to 4 weeks after hospital discharge.

When care is not co-located or not within the same health care system, a case manager can facilitate care coordination. Women who are receiving case management are also more likely to have virologic suppression and be retained in care.² It is especially critical to ensure continuity of ART between the antepartum and postpartum periods. Prior to hospital discharge, the mother should receive ART for herself and her newborn. Special hospital programs may need to be established to support dispensing ART to mothers before discharge.

Postpartum Maternal Antiretroviral Therapy

ART should be continued postpartum. Decisions about any changes to an ART regimen after delivery should be made after discussion between the woman and her HIV care provider, ideally prior to delivery. **When providing counseling about postpartum ART, health care providers should consider the woman's desire or potential for future planned or unplanned pregnancies in the context of the woman's anticipated ART regimen, choice of contraceptive, and the potential for any drug-drug interactions during the postpartum period that were not an issue during pregnancy (see [Preconception Counseling and Care for Women of Childbearing Age Living with HIV](#) and [Appendix D: Dolutegravir Counseling Guide for Health Care Providers](#)).** Some ART regimens that are recommended for nonpregnant adults (see the [Adult and Adolescent Antiretroviral Guidelines](#)) may not be recommended for use during pregnancy or in women who are trying to conceive because of insufficient data or pharmacokinetic or safety concerns. See [Recommendations for Use of Antiretroviral Drugs During Pregnancy, Table 4, Table 5, Teratogenicity, and Combination Antiretroviral Drug Regimens and Maternal and Neonatal Outcomes](#) for additional information and specific recommendations regarding regimens to use in pregnant women and women who are trying to conceive.

ART is currently recommended for all individuals with HIV to reduce the risk of disease progression and to prevent secondary transmission of HIV.³ The START and TEMPRANO trials were randomized clinical trials that demonstrated that early ART can reduce the risk of disease progression even in individuals with CD4 T lymphocyte cell counts >500 cells/mm³, and the HPTN 052 randomized clinical trial demonstrated that early ART can reduce the risk of sexual transmission of HIV to a discordant partner by 93%.⁴ **According to the Centers for Disease Control and Prevention, people living with HIV who take ART as prescribed and achieve and maintain an undetectable viral load have effectively no risk of transmitting HIV through sex (i.e., Undetectable = Untransmittable).**⁵

Helping women with HIV understand the need for lifelong ART is a priority during postpartum care. Several studies have demonstrated significant decreases in ART adherence postpartum.⁶⁻¹⁰ During the postpartum period, women may have difficulty with medical appointment follow-up, including appointment adherence, which can affect ART adherence. Systematic monitoring of retention in HIV care is recommended for all individuals living with HIV, but special attention is warranted for postpartum women. A number of studies have suggested that postpartum depression is common among women with HIV.¹¹⁻¹⁹ The U.S. Preventive Services Task Force recommends screening all postpartum women for postpartum depression²⁰ using a validated tool (e.g., **the Edinburgh Postnatal Depression Scale**); such screening is especially important for women living with HIV who appear to be at increased risk for postpartum depression and poor ART adherence during the postpartum period. Women should be counseled that postpartum physical and

psychological changes (and the stresses and demands of caring for a new baby) may make adherence more difficult and that additional support may be needed during this period.^{2,21-24}

Poor adherence has been shown to be associated with virologic failure, development of resistance, and decreased long-term effectiveness of ART.²⁵⁻²⁷ In women who achieve viral suppression by the time of delivery, postpartum ART simplification to once-daily, coformulated regimens—which are often the preferred initial regimens for nonpregnant adults—could promote adherence during this challenging time. Efforts to maintain adequate adherence during the postpartum period may ensure effectiveness of therapy (see [Adherence](#) in the [Adult and Adolescent Antiretroviral Guidelines](#)). For women who are continuing ART and who received increased protease inhibitor (PI) doses during pregnancy, available data suggest that doses can be reduced to standard doses immediately after delivery.

Secondary Sexual Transmission and Contraception

The postpartum period is a critical time for addressing safer sex practices to reduce secondary transmission of HIV to partners,²⁸ and clinicians should begin discussing these practices with the patient during the prenatal period. Topics for discussion during counseling on prevention of secondary transmission to the partner without HIV should include condom use, ART for the partner with HIV to maintain viral suppression below the limit of detection, and the potential use of PrEP by the partner without HIV. With full, sustained HIV suppression in the woman—with or without reliable PrEP use by her serodiscordant partner—the possibility of HIV transmission is negligible (for additional information, see [Reproductive Options](#)).

It is important to integrate comprehensive family planning and preconception care into all health care visits, with special attention given to these topics during the routine prenatal and postpartum visits. Lack of breastfeeding is associated with earlier return of fertility; ovulation returns as early as 6 weeks postpartum, and it can occur earlier in some women—even before resumption of menses—putting them at risk of pregnancy soon after delivery.²⁹ If a long-acting reversible contraceptive (LARC), such as an injectable, implant, or intrauterine device (IUD), is desired by the patient, it should be inserted prior to hospital discharge or during the routine postpartum visit. If the insertion of a LARC is postponed until the postpartum visit, Depo-Provera is a contraceptive option that can be given to avoid unplanned pregnancy in the interim, particularly if the postpartum appointment is missed or delayed. Interpregnancy intervals of <18 months have been associated with an increased risk of poor perinatal and maternal outcomes in women without HIV.³⁰ Given the stresses and demands of caring for a new baby, women may be more receptive to the use of effective contraception, yet they are simultaneously at higher risk of nonadherence to contraception and, thus, unintended pregnancy.³¹

The potential for drug-drug interactions between several antiretroviral (ARV) drugs and hormonal contraceptives is discussed in [Preconception Counseling and Care for Women of Childbearing Age Living with HIV](#) and [Table 3](#). A systematic review conducted for the World Health Organization summarized the research on hormonal contraception, IUD use, and risk of HIV infection and concluded that women with HIV can use all forms of contraception.^{32,33} A systematic review of hormonal contraceptive methods and risk of HIV transmission to partners without HIV concluded that oral contraceptives and medroxyprogesterone in women on ART does not increase the risk of HIV transmission, although the data are limited and present methodological issues.³⁴ Permanent sterilization is appropriate only for women who are certain they do not desire future pregnancies.

Infant Feeding

Avoidance of breastfeeding has been and continues to be a standard recommendation for women living with HIV in the United States, because maternal ART dramatically reduces but does not eliminate the risk of HIV transmission via breast milk and safe infant feeding alternatives are readily available. There are also other concerns, including the potential for drug toxicity in the neonate or, should HIV transmission occur, the risk that the infant will develop ARV drug resistance due to subtherapeutic drug levels in breast milk. However, clinicians should be aware that women may face social, familial, and personal pressures

to consider breastfeeding despite this recommendation; such pressures may be particularly problematic for women from cultures where breastfeeding is important, as they may fear that formula feeding would reveal their HIV status.^{35,36} It is therefore important to address these possible barriers to formula feeding during the antenatal period (see [Guidelines for Counseling and Managing Women Living with HIV in the United States Who Desire to Breastfeed](#)). Women who have an initial positive HIV test should not breastfeed unless a confirmatory HIV test is negative (for detailed guidance on maternal HIV testing, please see [Maternal HIV Testing and Identification of Perinatal HIV Exposure](#)). If HIV infection is confirmed, a full health assessment is warranted, including counseling related to newly diagnosed HIV infections, a discussion of the need for lifelong ART, an assessment of the need for opportunistic infection prophylaxis, and an evaluation for associated medical conditions. The newborn should receive appropriate testing and ARV drug management. Other children and partner(s) should be referred for HIV testing. Similarly, women with HIV should be made aware of the risks of HIV transmission via pre-mastication of infant food (i.e., by a mother prechewing or prewarming the food in her mouth).³⁷ It is not yet known whether there is a risk of HIV transmission with pre-mastication of food when the mother's viral load is below the limit of detection.

Lactation Inhibition

For women who do not breastfeed (as recommended for women with HIV), symptoms related to breast engorgement can be very unpleasant in the days following labor and delivery. Supportive measures, such as using acetaminophen or ibuprofen for pain control, alternating hot and cold compresses on the breasts, or wearing a tight-fitting sports bra, can help relieve symptoms related to breast engorgement.¹ Although pharmacologic options for lactation inhibition are not generally used in the United States, recent data suggest cabergoline may be appropriate for some women.³⁸ Cabergoline is a dopamine agonist/ergot derivative which reduces the production of prolactin. Bromocriptine, another dopamine agonist, is no longer used for lactation inhibition because of serious cardiovascular and neurologic complications associated with its use.³⁹

Because of its prolonged half-life, a single 1 mg dose of cabergoline given on the first day after delivery can suppress prolactin production for up to 21 days and effectively inhibit milk production. A systematic review⁴⁰ and a scoping review³⁸ assessing the safety and use of cabergoline for postpartum lactation inhibition both reported that side effects are common, but transient, and include dizziness, headache, nausea, and vomiting. However, severe and less common side effects such as postpartum psychosis have been reported. Available data on the safety profile of cabergoline are from small studies that may not have adequately captured the prevalence of serious side effects.

Cabergoline is **contraindicated** for women with hypertension (including pregnancy-induced hypertension, preeclampsia or eclampsia) or liver disease, and for women being treated with anti-psychotics or those who have a history of puerperal psychosis. When considering use of cabergoline for lactation suppression, the following factors should be discussed with women prior to delivery: limited data about its use, potential side effects, possible drug approval limitations by health insurance carriers, and the availability of non-pharmacologic alternatives.

Drug-Drug Interaction of Ergotamines with Antiretroviral Therapy

Coadministration of bromocriptine with PIs and cobicistat is contraindicated because elevated exposures of dihydroergotamine, ergotamine, and methylergonovine are expected.⁴¹ However, an interaction with these antiretroviral drugs is not expected with cabergoline because cytochrome P450-mediated metabolism appears to be minimal with cabergoline, unlike with other members of the same drug class.⁴²

Postpartum Hemorrhage Prevention

The management of postpartum hemorrhage does not differ for women with or without HIV. Women with HIV at risk for postpartum hemorrhage may benefit from using uterotonic medications such as methergine or other ergotamines for prevention or treatment of postpartum hemorrhage after vaginal delivery or cesarean delivery (see [Other Intrapartum Management](#)).

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